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| Notice of Allowability | Application No. | Applicant(s) | |
| | 09/973,086 | MOYES ET AL. | |
| | Examiner | Art Unit | |
| | Michael I Poe | 1732 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the amendment filed on January 21, 2004.
2. ☒ The allowed claim(s) is/are 1-32 (renumbered 5, 13-16, 18-23, 17, 24-25, 27-30, 9, 11-12, 10, 26, 31-32, 1, 3-4 and 2, respectively).
3. ☒ The drawings filed on 10 October 2001 are accepted by the Examiner.
4. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☒ None of the:
 1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| 1. <input type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413), Paper No./Mail Date <u>20040317</u> . |
| 3. <input type="checkbox"/> Information Disclosure Statements (PTO-1449 or PTO/SB/08), Paper No./Mail Date _____ | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____. |

EXAMINER'S AMENDMENT

Authorization

1. An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with applicant's attorney Joseph Berenato on March 19, 2004.

Amendments

2. The application has been amended as follows:

The abstract has been amended as follows:

line 2, "are provided" has been deleted after "core".

Claim 1 has been replaced by the following:

1. (Currently Amended) A method of forming a fire door core, comprising the steps of:
 - a) depositing into a mold a mixture of exfoliated vermiculite, a resin and a hydraulic binder[.];
 - b) controlling a temperature of the mold such that the mold [being] is maintained at a temperature less than the reaction temperature of the resin;
 - [b)] c) transferring the mold and thereby the mixture to a heated press;
 - [c)] d) applying to the mixture through the press a predetermined pressure at a predetermined temperature for a predetermined period sufficient to harden the mixture into a fire retardant fire door core having basic properties meeting industry-wide fire endurance tests; and
 - [d)] e) removing the hardened fire retardant fire door core from the mold;
- wherein the hardened fire retardant fire door core has good integrity and dimensional stability when exposed to fire temperatures.

Art Unit: 1732

Claim 10 has been amended as follows:

line 4, "a slab" has been deleted after "into" and -- the core -- has been inserted after "into".

Claim 13 has been amended as follows:

line 3, "the slab" has been deleted after "impregnating" and -- the core -- has been inserted after
 "impregnating".

Claim 14 has been amended as follows:

line 3, "the slab" has been deleted after "to" and -- the core -- has been inserted after "to".

Claim 15 has been amended as follows:

line 3, "the slab" has been deleted after "immersing", -- the core -- has been inserted after
 "immersing", "the slab" has been deleted after "allowing" and -- the core -- has been
 inserted after "allowing".

Claim 16 has been amended as follows:

lines 3 & 4, "the slab" has been deleted after "immersing" and -- the core -- has been inserted after
 "immersing".

Claim 17 has been amended as follows:

line 3, "the slab" has been deleted after "drying" and -- the core -- has been inserted after
 "drying".

Claim 23 has been amended as follows:

line 2, "the slab" has been deleted before "has" and -- the core -- has been inserted before
 "has".

Art Unit: 1732

Claim 24 has been replaced by the following:

24. (Currently Amended) A fire retardant fire door core forming system, comprising:

- a) a plurality of raw material sources for storing raw materials including exfoliated vermiculite, resin, and hydraulic binder;
- b) a mixing system, said mixing system in communication with said raw material sources, said mixing system comprising a first mixing assembly for combining [so that] said resin and said hydraulic binder [are combined] to create a submixture[.] and a second mixing assembly in communication with said first mixing assembly for combining said submixture [is then combined] with said exfoliated vermiculite to create a final mixture;
- c) a plurality of molds, each mold [for] in operative communication with said [mixing system] second mixing assembly for receiving a predetermined supply of said final mixture of said raw materials from said second mixing assembly thereby providing a plurality of filled molds;
- d) a vibratory assembly for receiving each of said filled molds and for causing [the mixed] said final mixture of said raw materials in said filled molds to achieve a substantially uniform density in [the] each of the associated filled and vibrated molds; and
- e) a heated press in operative association with said vibratory assembly for receiving the filled and vibrated molds and for applying sufficient heat and pressure for a sufficient period to cause [the mixed] said final mixture of said raw materials in each of said filled and vibrated molds to [achieve a slab] form fire retardant fire door cores having a hardened state.

Claim 25 has been amended as follows:

- line 3, "slabs" has been deleted after "hardened" and -- cores -- has been inserted after "hardened"; and
- line 5, "slabs" has been deleted after "drying the" and -- cores -- has been inserted after "drying the".

Art Unit: 1732

Claim 26 has been replaced by the following:

26. (Currently Amended) A method of forming [a hardened slab] fire door components of resin bonded vermiculate and hydraulic binder, comprising the steps of:

- a) depositing into a mold a mixture of exfoliated vermiculite, a resin and a hydraulic binder, the mold being maintained at a temperature less than the reaction temperature of the resin;
- b) transferring the mold and thereby the mixture to a heated press;
- c) applying to the mixture through the press a predetermined pressure at a predetermined temperature for a predetermined period sufficient to harden the mixture into a [slab] fire door core having a density from about 350 kg/m³ to about [800] 600 kg/m³; and
- d) removing the hardened [slab] fire door core from the mold.

Claim 27 has been replaced by the following:

27. (Currently Amended) The method of forming [a hardened slab] fire door components of resin bonded vermiculite and hydraulic binder as in claim 26, further comprising the steps of:

- a) depositing into a second mold a second mixture of exfoliated vermiculite, a resin and a hydraulic binder, the second mold being maintained at a temperature less than the reaction temperature of the resin;
- b) transferring the second mold and thereby the second mixture to the heated press; and
- c) applying substantially 800-1200 p.s.i. pressure to the second mixture in the second mold in the press and thereby forming a hardened slab having a density of from about 900 to about 1,300 kg/m³.

Claim 28 has been amended as follows:

line 1, "a hardened slab" has been deleted after "forming" and -- fire door components -- has been inserted after "forming".

Art Unit: 1732

Examiner's Statement(s) of Reasons for Allowance

3. The following is an examiner's statement of reasons for allowance:

- (1) See specifically reasons set forth in the remarks of the Applicant's response filed January 21, 2004. Note that the Examiner's Amendments were made, in part, to make the Applicant's claims comensurate in scope with the Applicant's arguments in the remarks of the Applicant's response filed January 21, 2004.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael I Poe whose telephone number is (571) 272-1207. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Colaianni can be reached on (571) 272-1196. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Michael Poe/mip


MICHAEL COLAIANNI
PRIMARY EXAMINER